

REMARKS/ARGUMENTS

Applicant by this amendment has overcome the various rejections under 35 U.S.C. §§ 102, 103, 112.

Please cancel claim 17 without prejudice.

With respect to claim 8, the “and/or” language is removed by the present amendment.

With respect to the § 102 rejection of claim 16, claim 16 is amended herewith to include the requirement of originally filed claim 17. The patentability of claim 16 is discussed below in connection with the rejection of originally filed claim 17, since claim 16 now has the same scope as original claim 17.

Claim 17 was rejected over Ho ‘358 under 35 U.S.C. § 103. Specifically, the Examiner has taken the position that “applying the feature of portability to educational devices is well known in the art, and therefore it would have been obvious to an artisan to modify the electronic learning aid described in Ho by providing portability features, in order to allow a user to easily transport the electronic learning aid thereby allowing use of the learning aid without geographical restrictions.” This conclusion, however, is inconsistent with the Ho ‘358 reference and with secondary considerations, discussed below.

Turning first to the Ho ‘358 reference itself, the “system” of the invention is described in connection with Figs. 3A and 3B as follows:

“FIG. 3A shows one embodiment of a system 150 implementing the present invention, preferably in software and hardware. **The system 150 includes** a server computer 152 and **a number of client computers**, such as 154. Each client

computer communicates to the server computer 152 through a dedicated communication link, or a computer network 156.

...

“The graphics adapter 168 is connected to a monitor 178; and the network interface adapter 170 is connected to the network 120. The network includes the internet, an intranet, the world wide web and other forms of networks.”

(Emphasis added).

There is no indication in Ho ‘358 that the system of that invention can be implemented in any way other than in the form of a “network” or that a single computer can be used in place of the “number of client computers”. The portions emphasized in the quotation above show that a “network” of computers is contemplated to accomplish the required task. There is no indication in the Ho ‘358 specification that a single computer is capable, or should be capable, of the features of the Ho ‘358 invention.

Given the unmistakable teaching of Ho ‘358, the Examiner’s suggestion of rendering Ho ‘358 invention portable would not result in the present invention, which specifies a stand-alone unit weighing less than one kilogram and having or generating its own power. Making the Ho ‘358 invention portable, on the contrary, would result in at least two smaller devices connected in some sort of network. It should be realized that having two devices connected in a network would severely compromise the useability of the present invention. How could the student use his or her device when the teacher’s device was not present? If the devices were hardwired together, how could the student carry it along for use during recess? Without the guidance of the instructor and “councilor” (Fig. 2), how could the student use the system at all?

Examining the consequences of the Examiner's suggestion reveals that Ho '358 and the present invention are directed to very different applications. Ho '358 is clearly designed for the traditional classroom setting, while the present invention—with its stand alone, portable nature, can also be used by the student in a “playful”, less structured environment. This difference is highlighted in the following passage from Ho '358:

“The present invention is applicable to teach any subject that can be taught by a computer. The subject may be a subject taught **in one-semester or in a year**, or in just **one class session**. The subject may cover inter-disciplinary areas, such as **electrical engineering and thermodynamics**, or **computer networking and programming techniques**. In the following, mathematics is the subject used to illustrate the present invention.

“In one embodiment, the subject is divided into major-topics, with each major-topic subdivided into minor-topics, and with each minor-topic further subdivided into line-items. Each line-item typically covers one well-defined area in the subject. In another embodiment, the subject is further divided into more levels below the line-items; and in a third embodiment, the subject is just divided into line-items.

“As an example of line-items, if the major-topic is **high school algebra . . .**
(Emphasis added).

As can be seen, all the examples given in the passage above reinforce the idea that the Ho '358 invention is designed for a very formal, high level instructional environment. Learning through “play” is not even a consideration in Ho '358. Nor is it at all clear how teaching thermodynamics or computer networking, for example, could be accomplished

on a miniaturized device. Ho '358 is consistent throughout—full-sized computers are used in a network situation to facilitate instruction of students by a teacher. The stand alone, light, portable device of the present invention is very different from that disclosed by Ho '358.

The fact that Ho '358 does not render the present claims obvious under 35 U.S.C. § 103 is further buttressed by the recognition the present invention has achieved. Attached hereto as Exhibit A is a printout, taken directly from www.flashmaster.com, that illustrates the tremendous acceptance and recognition the present invention has received. Among the comments contained in the Exhibit are “without a doubt, **the best math resource** I’ve ever come across” (The Old Schoolhouse Magazine); “helps children—**essentially on their own**—master the basic math facts” (Dr. Toy Best Vacation Children’s Product for 2003); “Bottom line, . . . **a great tool for your student . . . anywhere, anytime**” (The Home Educators’ Guide); “Kids who are learning math basics—addition, subtraction, multiplication, and division—can hone their skills with the FlashMaster, **a simple yet engaging handheld computing device.**” (PC Magazine); “What the FlashMaster is: **a hand-held electronic math drill product** that kids can **operate on their own.**” (Practical Homeschooling, Hot! Products); “The \$50 FlashMaster is an **11-ounce gadget** . . . that handles all the drills that earlier generations learned by grade school flashcards. . . . The thing takes on a gamelike feel . . . to **reward or prod the user.**” (Chicago Tribune); “The **11-ounce hand-held computer** can do all sorts of things that paper flash cards cannot. . . . It can display a variety of addition, subtraction, division and multiplication exercises. It allows children to **work by**

themselves, but retains their work so parts or teachers can review it later.” (The Philadelphia Inquirer).

The Exhibit is full of additional instances of recognition that focus on how the claimed features of portability, lightness, and the stand alone nature of the product promote learning by young children. These are unmistakable examples of the sort of secondary considerations that the Federal Circuit has indicated must be considered in determining patentability. And the parts highlighted above show that the success and recognition of this product are directly related to the claimed features. Claim 17 is allowable for all these reasons.

Claims 1-3, 8, 10, 12 and 14 are rejected under 35 U.S.C. § 103 over Ho ‘909. With respect to these claims, the Examiner takes a position like that set out above in connection with claim 16, namely: “Ho discloses all of the claimed subject matter with the exception of explicitly disclosing that the electronic learning aid has no external source of electricity and weighs less than one kilogram. However, it is the examiner’s position that applying the feature of portability to educational devices is well known in the art, and therefore it would have been obvious to an artisan to modify the electronic learning aid described in Ho by providing portability features, in order to allow a user to easily transport the electronic learning aid thereby allowing use of the learning aid without geographical restrictions.”

The Examiner’s position is in error, for exactly the same reasons as set forth above in connection with claim 16. The Ho ‘909 reference discloses a networked system (like Ho ‘358 described above) in Fig. 2A or a paper based system with a reader 128 in Fig. 1. The later system is, of course, irrelevant to applicant’s invention. The differences

inherent in miniaturizing the network-type system are explained above. Merely making Ho '909 smaller, therefore, does not result in the present invention. Claim 1 requires that the electronic learning aid be a stand-alone unit, weighing less than one kilogram, which functions without an external source of electricity. Making the Ho '909 network smaller does not result in a stand-alone unit. Moreover, there is no motivation for making Ho '909 smaller in the first place. Nothing in Ho '909 indicates a need or the desirability of making the various components of the network smaller—it appears that Ho '909 is very capable of accomplishing its task as is. In addition, why would one want to miniaturize the components (computers) of Ho '909, given that the various components must be connected for the invention to function properly? The only motivation is provided by applicant's present disclosure. This is improper use of hindsight.

In addition, the recognition achieved by the present invention in the marketplace (see discussion above) confirms that the presently claimed invention is not obvious.

For all these reasons, claim 1 is patentable over the Ho '909 reference.

Claim 2 depends from claim 1 and are allowable for the same reasons as that claim. Moreover, claim 2 provides that the display displays “evaluative scores **and** related information one score at a time.” The Examiner cites col. 13, lines 60-67 of Ho '909 for this feature, but there is no indication in that passage that Ho '909 displays “evaluative scores” one at a time. That passage talks about “extracting” not “displaying.” Moreover, the only item specifically mentioned as being extracted is the “student's identity”, which is not a “evaluative score”. Claim 2 is allowable for all these reasons as well. Claim 3 depends from claim 2 and is allowable for the same reasons as that claim.

Claim 8 is another independent claim that contains all the elements discussed above with respect to claim 1. It is allowable for the same reasons as that claim. Claims 10 and 12 depend from claim 8 and are allowable therewith. Claim 14 depends from claim 10 and is also allowable for the same reasons.

Claims 4-7, 9, 11, 13, 15, and 18 are rejected over Ho '909 in view of Sonnenfeld. Ho '909 is discussed above. Sonnenfeld is cited solely for the following passage (col. 70, lines 54-58):

“This web page will appear after **the test designer clicks the Delete Test Results button** on the ‘Test Takers Assigned to Take This Test’ Screen. This page allows the test designer to delete the results of any tests taken by the test taker account assignment (i.e., test score statistics and test time statistics.)” (Emphasis added)

That is, Sonnenfeld teaches that manual intervention of the test designer is required to delete results.

Claim 4 depends from claim 1 and further provides that “**said score memory discontinues** storing an evaluative score for a set of questions **when necessary** for storing therein an evaluative score for a more recent set of questions.” The highlighted language shows that this is an automatic operation, unlike the Sonnenfeld operation which requires (1) manual intervention of (2) the test designer. Claim 4 does not require any manual intervention, much less that of the test designer. It is also noteworthy that Sonnenfeld shows a network system, like Ho '909, and there is no indication that memory restrictions require the deletion of any data. Given, as explained above, the lack of reasons for miniaturizing Ho '909, the need for a feature such as claimed in claim 4

never arises. Claim 4 is allowable for these reasons, as well as for the same reasons as claim 1.

Claim 5 also depends from claim 1 and is allowable therewith. The Examiner cites col. 13, lines 60-67 of Ho '909 for this feature. As discussed above in connection with claim 2, this is a misreading of that passage of Ho '909. Claim 5 is also allowable, therefore, because the reference totally fails to show or suggest the claimed feature.

Claims 6 and 7 relate back to claim 4 and are allowable for the same reasons as that claim.

Claim 9 depends from claim 8 and contains a feature very similar to that discussed above in connection with claim 4. Specifically, claim 9 provides that the “missed-questions memory **discontinues storing a question when necessary** for storing therein a question more recently communicated by said question engine.” (Emphasis added) It is allowable for all the reasons set forth above in connection with claims 4 and 8. Similarly, claim 11 (which also relates back to claim 8) is directed to this same feature, and is allowable for these same reasons.

Claims 13 and 15 relate back to claims 9 and 11 respectively and are allowable for the same reasons as those claims. Claim 18 relates back to claim 4 and is allowable for the same reasons as that claim. Claim 18 also includes the feature of a missed-questions memory to “**discontinue storing a question when necessary** for storing therein a question more recently answered inappropriately by means of said input device.” As discussed above in connection with claim 9, this feature is absent from the art. Claim 18 is allowable for these reasons as well.

Claims 19-21 are rejected over Ho '909 in view of Ho '358. Claim 19 relates back to claim 4 and is allowable for the same reasons as that claim. Claim 20 relates back to claim 11 and is allowable therewith. Claim 21 relates back to claim 18 and is allowable therewith.

Claims 22 and 23 are rejected over Papadopoulos in view of Yamauchi et al. Claim 22 provides, in part, that "said question engine increasing the per question limit for those questions having a correct response that requires entry of more than one alphanumeric character by the user." The Examiner admits this feature is absent from Papadopoulos, but believes it is present in Yamauchi, stating: "Yamauchi teaches an electronic learning aid wherein a student must respond to question within a specified time limit, and further indicates that it is well known to modify the time limit for responding to a question, **based on the complexity of the correct response.**" (Emphasis added). That is not what claim 22 requires. Is the answer to 5×2 more "complex" than the answer to 4×2 ? Of course not. So Yamauchi under the Examiner's reading would not result in increasing the time to answer. But claim 22 does increase the time to answer since the correct answer to the first equation "10" has two alphanumeric characters, while the correct answer to the second equation "8" has only one. Claim 22 is allowable over this art.

Claim 23 depends from claim 22 and is allowable therewith. It further provides for increasing the "per question limit for those questions having a correct response that requires entry of at least three alphanumeric characters than the per question limit for those questions having a correct response that requires entry of two alphanumeric characters." Under the claimed invention, more time is allotted to answer " 10×10 " than

is allotted to answer “13 X 6”. Applying the complexity test of the Yamauchi reference, the opposite would occur—the second equation would be given more time than the first, because it is “harder”. Since the reference teaches away from the present invention, claim 23 is allowable for these reasons as well.

Claims 24-26 are rejected over Ziv-El in view of Lemelson et al. Claim 24 provides for “said question engine having at least one mode in which the engine **ceases accepting a response** to a question **upon the entry** of an **incorrect alphanumeric character**, said question engine in response to the entry of an incorrect alphanumeric character **displaying a subsequent question**, and said question engine further **waiting for a predetermined period of time after display of the subsequent question before accepting a response** to said subsequent question.”

Neither of the references work in this way. Ziv-El teaches (col. 22, lines 12-17) “Each character that the student types is immediately compared and evaluated for a match with the answer in the Answer field 152 of Fig. 12, while using the comparison and evaluation logic of Fig. 4. **The cursor moves irrespective of whether a match is found or not.**” (Emphasis added). Ziv-El, therefore, is diametrically opposed to the claimed requirement that the engine “ceases accepting a response . . . upon the entry of an incorrect alphanumeric character.” This distinction is fatal to the Examiner’s rejection. A combination of Ziv-El with any reference simply will not work as claimed in claim 24. Since Ziv-El does not automatically stop when an incorrect character is entered, it cannot then display a “subsequent question” in response to the incorrect entry. Ziv-El simply does not work in that manner. Lemelson does not fill the gap on either of these two issues. Lemelson is cited for a “pens down” period at the end of a test, but that is not

what the present invention is directed to. Rather, the present invention has a delay period in this specific situation for the following reason: Assume the student enters an incorrect character (not an incorrect answer, an incorrect character). This could be a "5" as a character entered in response to the equation "7 X 7". Rather than wait for the rest of an incorrect answer, the presently claimed system immediately goes on to the next question. The student, however, may still be trying to answer the previous equation. If the student thinks the answer is "51", therefore, he or she could enter "1" after the "5". However, the learning aid has moved on to the next question, so the "1" is inappropriate. Therefore, the learning aid blocks out the "1" in this situation. Nothing in the prior art even hints at such a feature. Claim 24 is allowable for all these reasons.

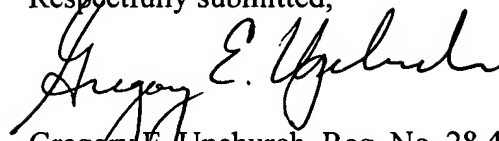
Claims 25 and 26 relate back to claim 24 and are allowable therewith. With respect to claim 25, the Examiner takes the position that Fig. 12 of Ziv-El shows this feature. That is incorrect. Fig. 12 is directed to the teacher entering the problems and answers, and presumably the system allows the teacher to make an error. Moreover, the text of Ziv-El quoted above is clearly inconsistent with the Examiner's application of Ziv-El. Claim 25 is allowable for these reasons as well.

In view of the above, all the rejections and objections are overcome and the case is in condition for allowance.

Applicants respectfully request that a Notice of Allowance of claims 1-16 and 18-26 (all the claims pending in this case) be issued.

The Office is hereby authorized to charge deposit account #08-3460 for any additional fees required.

Respectfully submitted,

A handwritten signature in black ink, reading "Gregory E. Upchurch". The signature is fluid and cursive, with the first name "Gregory" being more prominent and the last name "Upchurch" following in a similar style.

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